

Crosshouse Hospital
Renal Unit
(Ayrshire & Arran)

Clinical Standards Board for Scotland
(now part of NHS Quality Improvement Scotland)
Local Report on service provision for

Adult Renal Services

Renal failure is becoming increasingly common in Scotland. The condition and its treatment impacts greatly on a patient's life and work. Although no cure exists for renal failure, there is much that can be done to improve outcomes and quality of life for patients.

The Clinical Standards Board for Scotland (CSBS) Adult Renal Services Project Group focused on care provided in renal units for adults throughout Scotland. It developed 14 standards relating to the main areas of care for adults with renal failure. There was a particular focus on chronic renal failure, as this represents the vast majority of the workload in renal units. This report presents the findings from the CSBS peer review of performance against the standards.

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The Clinical Standards Board for Scotland (CSBS) was established as a Special Health Board in April 1999, with the remit to develop and run a quality assurance process for clinical services provided by NHSScotland. The ultimate objective of the work of CSBS is to improve the quality of clinical care provided across Scotland.

About this Report

CSBS published *Clinical Standards for Adult Renal Services* in February 2002. These standards are being used to assess the quality of services provided by NHSScotland nationwide in hospital settings.

This report presents the findings from the CSBS peer review to **Crosshouse Hospital Renal Unit** managed by **Ayrshire & Arran Acute Hospitals NHS Trust**. This review visit took place on **2 October 2002** and details of the visit, including membership of the review team, can be found in Appendix 2.

1.1 How the Standards were Developed

In May 2001, CSBS established the Adult Renal Services Project Group under the chairmanship of Dr Brian Junor, Consultant Nephrologist, Western Infirmary, North Glasgow University Hospitals NHS Trust. Membership of the Adult Renal Services Project Group includes both healthcare professionals and members of the public (see Appendix 3).

The Adult Renal Services Project Group oversees the CSBS quality assurance process of:

- developing standards;
- reviewing performance against the standards throughout Scotland, using self-assessment and external peer review; and
- reporting the findings from the review.

When developing the adult renal services standards, CSBS consulted widely throughout Scotland. The views of health service staff, patients, carers and the public were sought, and all the relevant evidence available at the time was taken into account. Draft standards were also piloted at two renal units, at Dumfries & Galloway Royal Infirmary, Dumfries, and the Western Infirmary, Glasgow.

1.2 How the Review Process Works

The CSBS review process has two key parts: local self-assessment followed by external peer review. First, each relevant Trust¹ assesses its own performance against the standards. An external peer review team then further assesses performance, both by considering the self-assessment data and visiting the renal unit to validate this information and discuss related issues. The review process is described in more detail below (see also the flow chart on page 8).

Self-Assessment by the Trust

On receiving the standards, each Trust responsible for the management of a main renal unit assesses its own performance using a framework produced by CSBS. This framework includes guidance about the type of evidence (eg guidelines, audit reports) required to allow a proper assessment of performance against the standards to be made.

The Trust submits the data it has collected for this self-assessment exercise to CSBS before the on-site visit, and it is this information that constitutes the main source of written evidence considered by the external peer review team.

External Peer Review

An external peer review team then visits the renal unit and speaks with local stakeholders (eg staff, patients, carers) about the services provided. Review teams are multidisciplinary, and include both healthcare professionals and members of the public. Training is provided for all CSBS reviewers. Each review team is led by an experienced reviewer, who is responsible for guiding the team in their work and ensuring that team members are in agreement about the assessment reached.

¹ For simplicity, the term 'Trust' is used throughout this document to refer to all the NHS organisations included in this national review. Further details on the renal units in Scotland are provided in Section 2.

The composition of each team varies, and members have no connection with the Trust they are reviewing. This promotes the sharing of good practice, and ensures that each review team assesses performance against the standards rather than make comparisons between one Trust and another.

At the start of the on-site visit, the review team meets key personnel responsible for the service under review. Reviewers then speak with local stakeholders about the services provided, including support group representatives and patients who had been selected randomly using the Scottish Renal Registry database. After these meetings, the team assesses performance against the standards, based on the information gathered during both the self-assessment exercise and the on-site visit.

The visit concludes with the team providing feedback on its findings to the Trust. This includes specific examples of local initiatives drawn to the attention of the review team (recognising that other such examples may exist), together with an indication of any particular challenges facing the Trust.

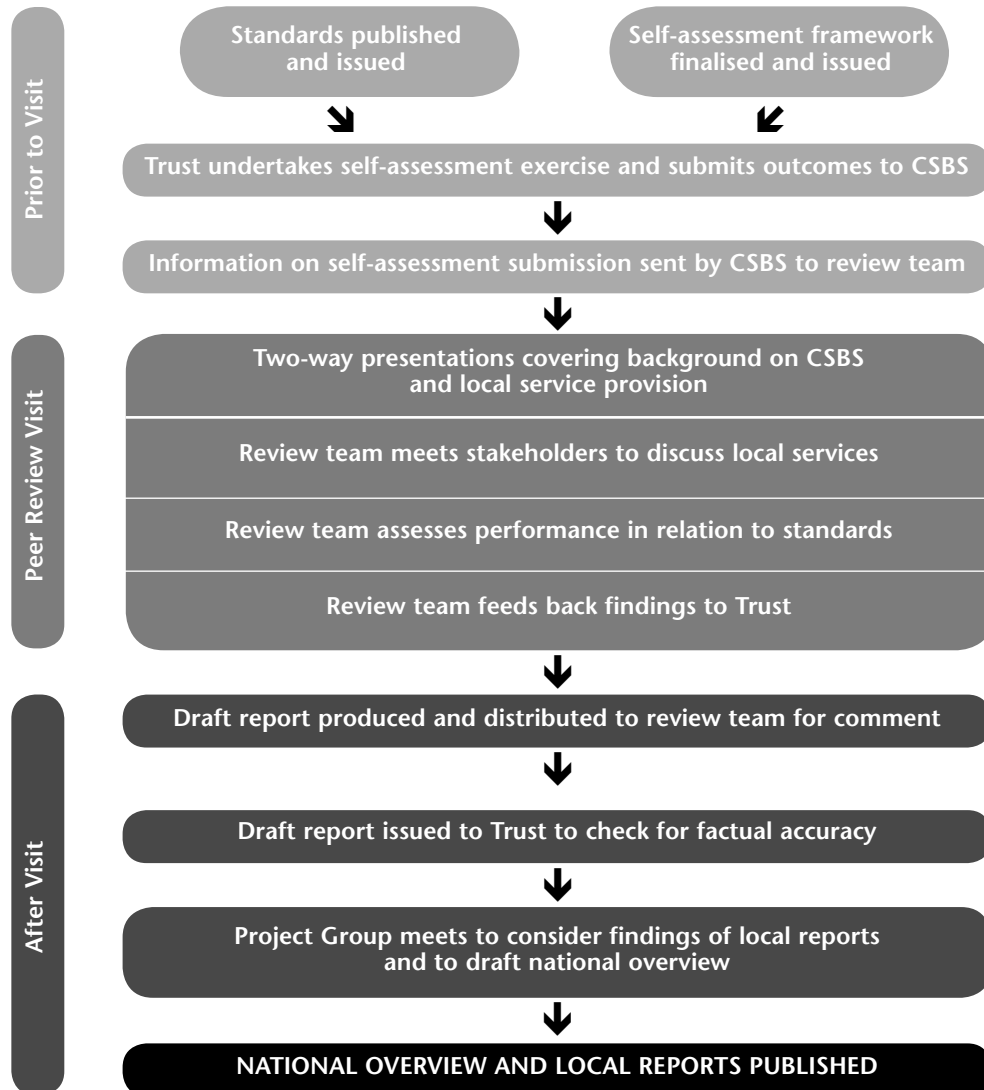
Assessment Categories

Each review team assesses performance using the categories 'met', 'not met' and 'not met (insufficient evidence)', as detailed below:

- **'Met'** applies where the evidence demonstrates the standard and/or criterion is being attained.
- **'Not met'** applies where the evidence demonstrates the standard and/or criterion is not being attained.
- **'Not met (insufficient evidence)'** applies where no evidence is available for the review team, or where the evidence available is insufficient to allow an assessment to be made.

A final category **'not applicable'** is used where a standard and/or criterion does not apply to the Trust under review.

The CSBS review process at a glance:



1.3 Reports

After the review visit, the project officer drafted a local report detailing the findings of the review team. This draft report was sent to the review team for comment, and then to the Trust to check for factual accuracy.

Following completion of the national review cycle, the Adult Renal Services Project Group reconvened to examine review findings and make recommendations to CSBS. The Adult Renal Services Project Group was then responsible for overseeing the production of a national overview of service provision across Scotland in relation to the standards. This document includes both a summary of the findings (highlighting examples of local initiatives and challenges for the service) and recommendations for improvement.

The aim of this review is to report whether the services provided by NHSScotland, both nationally and locally, met the agreed standards, and not to review the work of individual healthcare professionals. In achieving this aim, variations in practice (and potentially quality) within a service will be encountered. In such cases, variations will be reported.

Please note — all reports published by CSBS (now part of NHS QIS) are available on the NHS QIS website.

2 Summary of Findings

2.1 Overview of Local Service Provision

Ayrshire & Arran is situated in south-west Scotland and has a population of around 373,400. The majority of the population live in urban areas, of which Ayr and Kilmarnock are the largest in the region, although a significant proportion live in rural areas. The proportion of older people in the population is higher than the national average, as are levels of illness and deprivation.

Local NHS System and Services

Ayrshire & Arran NHS Board is responsible for improving the health of the local population and for the delivery of the healthcare required. It provides strategic leadership and has overall responsibility for the efficient, effective and accountable performance of the NHS in Ayrshire & Arran.

Clinical services are provided through two Trusts, Ayrshire & Arran Acute Hospitals NHS Trust and Ayrshire & Arran Primary Care NHS Trust. The Trusts are accountable for the clinical services they provide, through the framework of clinical governance.

Further information about the local NHS system can be accessed via the website of Ayrshire & Arran NHS Board: www.show.scot.nhs.uk/aahb

Crosshouse Hospital Renal Unit, Kilmarnock is one of ten renal units treating adults with renal failure across Scotland.

A main renal unit is the centre of renal expertise for a particular geographical area and manages the provision of renal services within that area. Both out-patient and in-patient renal services are offered, as well as specialist services. In some areas the main renal unit is supported by one or more renal satellite unit. A renal satellite unit is a haemodialysis facility which is linked to a main unit, and is not autonomous for medical decisions. They are largely nurse-led and typically provide a more accessible haemodialysis service to chronic renal patients in general good health, and not requiring the services and care of a main renal unit.

The ten renal units, to which patients in Scotland may be referred on the basis of clinical need (and location), are based at:

-
- Aberdeen Royal Infirmary
(including three satellite units at Chalmers Hospital, Banff, Dr Gray's Hospital, Elgin, and Peterhead Community Hospital)
 - Dumfries & Galloway Royal Infirmary, Dumfries
 - Crosshouse Hospital, Kilmarnock
 - Glasgow Royal Infirmary
(including two satellite units at Falkirk & District Royal Infirmary and Stobhill Hospital, Glasgow)
 - Monklands Hospital, Airdrie
 - Ninewells Hospital, Dundee
 - Queen Margaret Hospital, Dunfermline
(including one satellite unit at Victoria Hospital, Kirkcaldy)
 - Raigmore Hospital, Inverness
 - Royal Infirmary of Edinburgh
(including two satellite units at the Western General Hospital, Edinburgh, and Borders General Hospital, Melrose)
 - Western Infirmary, Glasgow
(including an annex at Gartnavel General Hospital, Glasgow, and a satellite unit at Inverclyde Royal Hospital, Greenock)

There is also a small renal unit at Gilbert Bain Hospital, Lerwick, Shetland. This operates as an autonomous unit, but due to the small number of patients involved, has not been visited as a part of this review process. However, patients are referred to Aberdeen Royal Infirmary for renal transplant, and for complex acute renal failure.

There are three transplant centres in Scotland to which patients suitable for transplant may be referred. These are based at:

- Aberdeen Royal Infirmary
- Royal Infirmary of Edinburgh
- Western Infirmary, Glasgow

The following information was submitted by Ayrshire & Arran Acute Hospitals NHS Trust:

At the time of the visit there were 161 patients receiving renal replacement therapy. There were 29 new patients during the previous year. The number of patients on different forms of renal replacement therapy are as follows:

- hospital haemodialysis	81
- home haemodialysis	2
- continuous ambulatory peritoneal dialysis (CAPD)	16
- automated peritoneal dialysis (APD)	25
- renal transplant	37

Patients with suspected renal failure are initially referred to Crosshouse Hospital Renal Unit for renal investigation, and are seen at weekly clinics at Crosshouse Hospital and Ayr Hospital. For patients requiring renal replacement therapy, dialysis is started at Crosshouse Hospital, with treatment continued at home where appropriate. Transplant patients are typically referred to the transplant unit at the Western Infirmary Transplant Unit, Glasgow. Follow-up of transplant patients is undertaken at the transplant unit for 1 year post-transplant, and then transferred to Crosshouse Hospital thereafter.

From the introductory sessions at the start of the visit, the following points regarding service provision were noted:

- Vascular surgery services for dialysis access are based at Ayr Hospital, although some access surgery for renal patients is performed at Crosshouse Hospital.
- The 'take-on' rate of new patients for renal replacement therapy is approximately 107 patients per million of the population per year.
- The renal unit has 22 bays for haemodialysis. To accommodate prospective future numbers of patients requiring haemodialysis it is projected that between 42-50 stations will be required in Ayrshire in 10 years' time; currently plans are in place to increase capacity over two phases to 38 stations.
- Currently there is no provision of a pre-dialysis clinic. A contributory factor for this is limited medical staffing to set up and run the clinic.

- It was noted that the number of nursing staff currently in post is significantly less than the full complement for which funding is available. It was reported that there are major issues with recruitment and retention of nursing staff, and a perception that there are difficulties attracting experienced nurses to advertised posts.
- Medical staffing comprises one whole time equivalent (WTE) consultant, fulfilled by two individuals, and one staff grade doctor, one senior house officer and one junior house officer. Both consultants fulfil a full medical rota slot in addition to their nephrology duties. This impacts on the amount of time they can dedicate to renal patients, as well as their ability to influence decisions regarding renal service provision.
- Each week, a multidisciplinary meeting is held during which a quarter of the dialysis population is reviewed. This results in all individual patients being reviewed on a monthly basis. These meetings are felt to be crucial to the smooth running of the unit and facilitation of communication between the different members of the multidisciplinary team.
- In-patient care is provided in a 12-bedded ward, with services for peritoneal dialysis patients provided from an area situated adjacent to this ward.

Scottish Renal Registry

There is clearly a commitment to, and an awareness of, the importance and value of data collection and audit for renal services in Scotland. The Scottish Renal Registry has played a significant role in the development of audit in renal services. It was established in 1991 by the Scottish Renal Association, as a computer-based registry for patients receiving renal replacement therapy for end stage renal disease in Scotland. Once a system of computerised data collection was operational, the Scottish Renal Registry moved into comparative audit between renal units.

The Registry is now able to audit many of the standards developed by the UK Renal Association. This has resulted in renal units across Scotland sending data to the Scottish Renal Registry for the purposes of national audit. In addition to the results of national audits being published in the Registry's Annual Report, all renal units are provided with the national results and their individual unit's results.

2.2 Summary of Findings Against the Standards

A summary of the findings from the review, including examples of local initiatives drawn to the attention of the review team, is presented in this section. A detailed description of performance against the standards/criteria is included in Section 3.

Haemodialysis

Audit data provided by the unit demonstrated that the haemodialysis adequacy target is achieved. It was noted that this target is achieved despite there having been issues with vascular access in the past; action was now being taken to resolve these issues. There is rapid and effective system for taking action for patients who do not achieve the target haemodialysis adequacy.

The quality of water for dialysis is monitored weekly and the quality of fluid is monitored monthly. It was noted that endotoxin count is measured weekly in addition to microbial count. The review team noted that water quality data are recorded in more than one system, and that there is no formal system in place to ensure accuracy of data entry in these systems.

Peritoneal Dialysis

Audit data provided by the unit demonstrated that the peritoneal dialysis adequacy target is met for patients who have been on peritoneal dialysis for more than 8 weeks. The effective system for monitoring peritoneal dialysis adequacy, administered by nursing staff, was commended by the review team.

Example of a local initiative

Audit data provided by the unit confirmed that peritonitis rates are low. The review team noted a meticulous approach to dialysis management, even to the extent of nursing staff being present during the process of siting and inserting catheters. This attention to detail was suggested as being one of many possible contributory factors for the achievement of the low peritonitis rates.

Haemoglobin in Patients on Dialysis

Audit data provided by the unit demonstrated that the haemoglobin targets are not achieved in a minimum of 85% of patients. The review team was concerned to

note that medical staff are prohibited by NHS Ayrshire & Arran from prescribing erythropoietin for pre-dialysis patients unless certain other conditions are present, as stated in the anaemia protocol. In order to manage anaemia in most pre-dialysis patients, medical staff are therefore compelled to seek alternative ways of improving haemoglobin concentration.

Although there is no designated anaemia co-ordinator, the review team noted that four members of nursing staff have a specific responsibility for managing anaemia.

Dialysis Access

Audit data provided by the unit confirmed that the percentage of patients having permanent dialysis access available at their first dialysis session is within the essential limit set by the standard. There are comprehensive systems for documenting access type, any complications and, where necessary, reasons for patients not having permanent access available at their first dialysis session.

Example of a local initiative

The review team commended the use of an access diary, which is used to document for each patient the type of vascular access used for dialysis, and any complications experienced. It was noted that this diary provides comprehensive data, which could be used for audit purposes.

Audit data provided by the unit demonstrated that less than 70% of patients have arteriovenous fistulae or vein graft as their permanent haemodialysis access, and that permanent catheters are used as haemodialysis access in more than 20% of patients. It was noted that an additional vascular surgeon has recently been appointed, which it is hoped will have a positive impact on the dialysis access service in the near future.

Nutritional Status

There is a system in place to ensure all haemodialysis and peritoneal dialysis patients are assessed at least 6-monthly to identify those at risk of malnutrition. However, low creatinine clearance patients are not currently assessed. Nutritional goals are set, documented and monitored in accordance with Renal Nutritional Group Standards for those identified as at risk. Each patient's nutritional status is discussed via the regular multidisciplinary meetings and documented in dietetic records.

It was noted that the renal dietetics service is reliant on one member of staff who was absent at the time of the visit. Dietetic cover for this individual is available on an emergency basis only, with nursing staff covering responsibility for delivery of basic nutritional advice. Staff interviews indicated that this level of cover was insufficient.

Baseline anthropometry is carried out on an ad hoc basis only. A contributing factor for this is limited dietetic staffing.

Drug Therapy

Protocols are in place for the management of anaemia, treatment of peritonitis, and immunisation for hepatitis B. The review team was concerned to note that the anaemia protocol states that erythropoietin cannot be prescribed for pre-dialysis patients.

There is no designated pharmacist with a recognised postgraduate qualification and/or renal experience. Pharmacy advice is provided by a ward pharmacist.

The review team commended the high quality of the information about the use of drugs in chronic renal failure and dialysis patients. This information is provided to both patients and healthcare professionals.

Access to Multidisciplinary Team

It was reported that patients can be referred to most members of the multidisciplinary team when required. However, the review team expressed concern regarding levels of staffing, which were felt to be low in all areas, including medical and nursing. Overall, the review team commended the good multidisciplinary team working and effective communication facilitated by weekly multidisciplinary meetings. The routine involvement of the social worker in these meetings was noted. Staff interviews confirmed these meetings are crucial to the smooth running of the renal unit.

Issues with access to the multidisciplinary team were noted in relation to dietetics, in the absence of the regular dietician. It was noted that there is no dedicated pharmacist or designated counselling service. It was also observed that communications with primary care colleagues could be improved.

Assessment for Transplantation

Although staff interviews inferred that all patients are assessed for transplantation within 3 months of starting dialysis, facilitated by a recently introduced database system, the review team was unable to determine whether this system had been fully implemented at the time of the visit.

Patients referred to the Western Infirmary Transplant Unit, Glasgow, are seen by a nephrologist and a transplant surgeon.

The review team noted that although individual patients on the waiting list are reviewed at regular multidisciplinary meetings, the percentage of patients on the waiting list for transplantation is not formally reviewed. Patients are informed of a change in their status for transplantation. However, they are not routinely informed if they are still on the waiting list.

Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant, and referred to the Royal Infirmary of Edinburgh if suitable.

Out-patients

Audit data provided by the unit indicated that the essential limits for time between referral and appointment, as detailed in the standard, are not met for new patients being seen following referral. The major limiting factor identified is the level of medical staffing. It was noted that there is currently no provision for a pre-dialysis clinic, which impacts on other clinics.

The review team commended the fact that clinic letters are typically sent to the GP within 2 weeks of being seen by a nephrologist. However it was noted that this is achievable only through secretarial staff working in excess of contracted hours.

Provision of Patient Information

The review team commended the range of information provided to all people diagnosed with chronic renal failure, and carers where appropriate. The comprehensive advice provided to patients on treatment options was commended by the review team and by patients interviewed.

It was noted that a member of nursing staff had been seconded to provide pre-dialysis nurse specialist services for a trial period. Staff and patients recognised the benefits provided by this nurse specialist, particularly through a home visit programme. The review team noted there were no immediate plans to make this post substantive.

Transportation for Haemodialysis

The results of the audit provided by the unit indicated that all patients are collected within an hour of their allocated pick-up time. However, it was noted that these results did not correspond with staff or patient perception of transportation for haemodialysis. The audit confirmed that the targets set for patients starting dialysis, and for being collected to return home at the end of dialysis, are not achieved.

The review team concluded that the waiting area for patients awaiting hospital transport, although comfortable, does not have sufficient capacity to cope during peak times.

Audit: Information/Data Collection

Computerised systems are in place to ensure the continuous collection of the Scottish Renal Registry core data set, although it was noted the range of systems necessitates double data-entry. The unit takes part in comparative audits of dialysis through the Scottish Renal Registry and routinely collects all relevant data detailed in the standard.

Although incidence, management and outcome data on acute renal failure are currently collected as part of a national study, it was noted that it will not be possible to continue collection of these data after the end of the national study.

Detailed Findings Against the Standards 3

Standard 1 - Clinical Management/Treatment 1: Haemodialysis

All people on haemodialysis achieve the Renal Association targets set for adequacy. There is regular audit of haemodialysis adequacy (see Standard 14).

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: The target for haemodialysis adequacy is a Urea Reduction Ratio not less than 65% or stable Kt/V not less than 1.2 (dialysis and residual renal function) for thrice-weekly dialysis. This is achieved in a minimum of 85% of patients. Where Kt/V is measured, the method used to calculate is documented.

STATUS: Audit data provided by the unit demonstrated that this criterion is met. The review team commended the clear, simple protocol for haemodialysis, and noted that the target is met despite residual issues relating to previous problems with vascular access for haemodialysis.
Met

2: Reasons for patients not achieving the target haemodialysis adequacy are documented and appropriate action taken.

STATUS: Reasons for patients not achieving the target haemodialysis adequacy are documented in dialysis notes. Nursing staff have an effective and rapid system for taking appropriate action for patients who do not achieve target haemodialysis adequacy. This was commended by the review team.
Met

3: Haemodialysis is offered thrice-weekly unless there are specific circumstances.

STATUS: All patients are offered and receive thrice-weekly dialysis.
Met

4: Quality of water for dialysis and/or dialysis fluid is monitored monthly and meets Renal Association targets for microbial count.

STATUS: The quality of water for dialysis is monitored weekly, and quality of fluid is monitored monthly. Results meet the Renal Association targets for microbial count. It was noted that endotoxin count is measured weekly in addition to microbial count. The review team noted that the current recording system necessitates re-entry of data by a number of staff, for which there is no protocol or quality assurance process.
Met

5: The percentage of patients achieving the Renal Association Standards for pre-dialysis potassium, phosphate, and calcium is calculated at a minimum of 3-monthly intervals.

STATUS: The percentage of patients achieving the Renal Association standards for pre-dialysis potassium, phosphate and calcium is calculated monthly.
Met

Standard 2 - Clinical Management/Treatment 2: Peritoneal Dialysis

All people on peritoneal dialysis achieve the Renal Association targets set for adequacy. There is regular audit of peritoneal dialysis adequacy (see Standard 14). There is safe and effective management in place for prevention of peritonitis.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: The target for peritoneal dialysis adequacy is a total weekly creatinine clearance (dialysis and residual renal function) not less than 50 l/week/1.73m² and/or weekly urea Kt/V exceeds 1.7 by 8 weeks after beginning peritoneal dialysis. This is maintained in a minimum of 85% of patients.

STATUS: Audit data provided by the unit demonstrated that this criterion is met. The review team commended the nursing support provided to the high proportion of peritoneal dialysis patients, in particular the home support programme.
Met

2: Reasons for patients not achieving the target peritoneal dialysis adequacy are documented, and appropriate action taken.

STATUS: Reasons for patients not achieving the target peritoneal dialysis adequacy are documented in nursing notes, with appropriate action being taken.
Met

3: The percentage of patients achieving the Renal Association Standards for potassium, phosphate and calcium is calculated at a minimum of 3-monthly intervals.

STATUS: The percentage of patients achieving the Renal Association standards for potassium, phosphate and calcium is calculated at 3-monthly intervals.
Met

4: The use of disconnect systems is standard unless contra-indicated.

STATUS: The use of disconnect systems is standard for all patients.
Met

5: Peritonitis rates are not more than one episode/18 patient-months.

STATUS: Audit data provided by the unit demonstrated that this criterion is met. The review team commended the low rate of peritonitis. A contributing factor to the low peritonitis rates could be the attention to detail paid to the siting and insertion of catheters; a process which involves the nursing staff.
Met

Standard 3 - Clinical Management/Treatment 3: Haemoglobin in Patients on Dialysis

All people on haemodialysis or peritoneal dialysis achieve targets set for haemoglobin levels after 3 months of dialysis. Transfusion is avoided wherever possible.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: The target is a haemoglobin concentration not less than 10g/dl (haematocrit is not less than 30%) after 3 months of dialysis. This is achieved in a minimum of 85% of patients.

STATUS:
Not met

Audit data provided by the unit demonstrated that the target haemoglobin concentration is not met in a minimum of 85% of patients. A major factor affecting the unit's ability to meet this target is the availability of erythropoietin. The review team expressed concern that medical staff were prohibited from prescribing erythropoietin for pre-dialysis patients unless patients are dependent upon blood transfusion, in cardiac failure, or have worsening angina, as stated in the protocol. It was noted that this prohibition can affect the approach to clinical care taken for individual patients who might otherwise be prescribed erythropoietin.

2: Reasons for patients not achieving the target haemoglobin are documented, and appropriate action taken.

STATUS:
Met

Reasons for patients not achieving the target haemoglobin are documented in nursing notes. There is a protocol which documents action to be taken to correct haemoglobin levels. Although there is no anaemia co-ordinator, four nurses have a specific responsibility for managing anaemia.

3: Iron status is monitored at a minimum of 6-month intervals.

STATUS:
Met

Iron status is monitored 2-monthly for haemodialysis patients and 3-monthly for peritoneal dialysis patients.

4: The number of patients receiving blood transfusions is monitored.

STATUS:
Met

The number of patients receiving blood transfusions is monitored.

Standard 4 - Clinical Management/Treatment 4: Dialysis Access

All people requiring dialysis have timely surgery for access.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: Permanent access is available at the first dialysis in a minimum of 60% of patients who present at the renal service more than 3 months before requiring dialysis.

STATUS: Audit data provided by the unit demonstrated that this criterion is met for both
Met haemodialysis and peritoneal dialysis patients.

2: Reasons for patients not having permanent access available at their first dialysis are documented.

STATUS: Reasons for patients not having permanent access available at their first dialysis
Met are documented in nursing notes and also in a folder kept by the consultant nephrologist. The review team commended the access diary which is used to list each patient's access type and any complications.

3: There are adequate dedicated theatre sessions (Reference Guideline: one weekly theatre session per 120 patients (approximately) on dialysis – National Service Standard 3).

STATUS: There is one dedicated theatre session for dialysis access per 2 weeks, and in
Met addition patients can be added to a regular theatre list. The review team concluded this provision was satisfactory.

Desirable Criteria

4: A minimum of 70% of patients have arteriovenous fistulae or vein graft as their permanent haemodialysis access.

STATUS: Audit data provided by the unit demonstrated that this criterion is not met.
Not met The review team noted that an additional vascular surgeon has recently been appointed, which it is hoped will help to address this issue.

5: Permanent catheters are used as haemodialysis access in a maximum of 20% of patients.

STATUS: Audit data provided by the unit demonstrated that this criterion is not met.
Not met The review team noted that an additional vascular surgeon has recently been appointed, which it is hoped will help to address this issue.

Standard 5 - Clinical Management/Treatment 5: Nutritional Status

All patients receiving dialysis or with low creatinine clearance have nutritional status regularly assessed, evaluated and documented.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: All patients are assessed at least 6-monthly to identify those at risk of malnutrition.

STATUS: Staff interviews confirmed that all haemodialysis and peritoneal dialysis patients are assessed at least 6-monthly, using a range of parameters, to identify those at risk of malnutrition. However, low creatinine clearance patients are not currently assessed.
Not met

2: Patients identified as at risk have nutritional goals set, documented and monitored in accordance with Renal Nutritional Group Standards.

STATUS: Staff interviews confirmed that not all patients identified as at risk have nutritional goals set, documented and monitored in accordance with Renal Nutritional Group Standards. Only those patients referred have nutritional goals set. With current staffing levels, patients are prioritised for referral.
Not met

3: Reasons why patients identified as at risk do not achieve nutritional goals are documented, and appropriate action taken.

STATUS: Reasons why patients identified as at risk do not achieve nutritional goals are documented in dietetic records, which are discussed at multidisciplinary monthly meetings. It was noted that, due to temporary staff absence, the regular review of dietetic records was not occurring at the time of the visit.
Met

4: There is a designated dietician with a recognised postgraduate qualification and/or renal experience.

STATUS: There is a designated renal dietician with renal experience. It was noted that, due to temporary staff absence, dietetic cover was available on an emergency basis only at the time of the visit. Nursing staff were providing patients with basic dietary advice, although it was felt that this was not comprehensive.
Met

Desirable Criteria

5: Baseline anthropometry is documented for all patients at the beginning of dietetic treatment by an individual trained in the technique.

STATUS: Baseline anthropometry is carried out on an ad hoc basis for all patients. It is not possible to carry this out for all patients at the beginning of dietetic treatments, due to limited resources.
Not met

Standard 6 - Clinical Management/Treatment 6: Drug Therapy

All people with chronic renal failure or on renal replacement therapy receive appropriate drug therapy and advice on their medicines.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1.1: There are protocols for: Management of anaemia; Treatment of peritonitis; Immunisation for Hepatitis B.

STATUS: Met
There are protocols in place for the management of anaemia, treatment of peritonitis and immunisation against hepatitis B. Staff showed a good awareness of these. The review team expressed concern that the anaemia protocol states that erythropoietin cannot be prescribed for pre-dialysis patients, unless certain other conditions are present.

1.2: In addition, for transplant units there are protocols for: Immunosuppressive regimens; Cytomegalovirus and pneumocystis infection prophylaxis; Renal vein thrombosis prophylaxis; Management of delayed graft function.

STATUS: Not applicable
Crosshouse Hospital Renal Unit is not a transplant unit. Transplant patients are managed for 1 year post-transplant by the Western Infirmary Transplant Unit, Glasgow.

2: All patients' prescriptions are reviewed to ensure their drug therapy is appropriate for their circumstances.

STATUS: Met
Staff interviews confirmed that patients' prescriptions are reviewed on a monthly basis by medical staff. It was noted that there is no dedicated renal pharmacist, although the ward pharmacist provides advice for in-patients.

3: Information and advice about the use of drugs in chronic renal failure or in dialysis patients is available to healthcare professionals and renal patients.

STATUS: Met
Information and advice about the use of drugs in chronic renal failure or in dialysis patients is given verbally, and is followed up with information leaflets. The review team commended the quality of patient information available.

Information and advice about the use of drugs in chronic renal failure, or in dialysis patients, is available to healthcare professionals in the form of a renal handbook which is kept on the wards. Advice can also be obtained from the ward pharmacist.

4: There is a designated pharmacist with a recognised postgraduate qualification and/or renal experience.

STATUS: Not met
There is no designated pharmacist. Pharmacy advice is provided by a ward pharmacist.

Standard 7 - Clinical Management/Treatment 7: Access to Multidisciplinary Team

All people with end stage renal failure have access to a multidisciplinary team.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

- 1: In addition to the regular medical and nursing staff, patients are referred to the following services when required: physiotherapy; pharmacy; dietetics; occupational therapy; designated social worker with a recognised postgraduate qualification and/or renal experience; primary healthcare team; community hospitals (where applicable); transplant co-ordinator/ liaison nurse; counselling service; clinical psychology; liaison psychiatry.

STATUS:
Not met

It was reported that patients are referred to most of these services when required. While there is a clinical psychology service, it was noted that there were issues around access to this service, although urgent patients can be seen within a few weeks. There is no counselling service available, although all members of the multidisciplinary team counsel patients. It was also noted that the dietetics service is reliant on one individual staff member, with no cover available during periods of absence. Staff reported that links with GPs are informal, and that communication mechanisms could be improved.

- 2: Dialysis patients are regularly and confidentially reviewed by a multidisciplinary team including medical and nursing staff, dieticians and pharmacists.

STATUS:
Not met

The review team confirmed that dialysis patients are regularly and confidentially reviewed by a multidisciplinary team at weekly meetings. The review team commended the involvement of the social worker in these meetings; however, it was noted that no pharmacist is involved.

Standard 8 - Transplantation 1: Assessment for Transplantation

All dialysis patients are assessed for suitability of transplantation within three months of starting dialysis.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: All patients are assessed for transplantation within 3 months of starting dialysis and those suitable are referred to a Transplant Centre.

STATUS: Staff reported that all patients are assessed for transplantation within 3 months of starting dialysis, using a recently introduced database system, with those suitable being referred to the Western Infirmary Transplant Unit, Glasgow. However, the review team was unable to assess whether this system had been fully implemented at the time of the visit.
Not met (insufficient evidence)

2: Patients referred are seen by a nephrologist and surgeon from the Transplant Centre.

STATUS: All patients referred are seen by a nephrologist and surgeon at the Western Infirmary Transplant Unit.
Met

3: Decisions regarding the patient's assessment at the Transplant Centre are communicated in writing, to the patient, the GP and, where appropriate, the carer.

STATUS: Although a system for communicating decisions regarding the patient's assessment was described, the review team was unclear as to whether these decisions were communicated in writing to the relevant parties.
Not met (insufficient evidence)

4: All patients on dialysis are reviewed annually for their suitability for transplantation.

STATUS: A list of patients on the transplant list is provided to all units by the Transplant Centre. This list is discussed routinely at Crosshouse Hospital Renal Unit multidisciplinary meetings. It is hoped that the recently introduced database will facilitate a more formal annual review of suitability of dialysis patients for transplantation.
Met

5: All patients on the waiting list are informed of the outcome of their annual review either orally or in writing.

STATUS: Although patients are informed of a change in their status for transplantation, they are not routinely informed if they are still on the waiting list.
Not met

6: The percentage of dialysis patients on the waiting list for transplantation is monitored and reviewed annually.

STATUS: Individual patients on the waiting list are reviewed on a monthly basis at multidisciplinary meetings; however, the percentage of dialysis patients on the waiting list is not formally reviewed annually.
Not met

7: The unit takes part in the Renal Donor Sharing Scheme operated by UK Transplant.

STATUS: Crosshouse Hospital Renal Unit takes part in the Renal Donor Sharing Scheme operated by UK Transplant.
Met

8: Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant.

STATUS: Type 1 diabetic patients with renal failure are considered for combined pancreas and kidney transplant, and are referred to the Royal Infirmary of Edinburgh Transplant Unit if suitable.
Met

Standard 9 - Transplantation 2: Kidney Retrieval

The removal and use of cadaver kidneys for transplantation is carried out to optimise the quality of future renal function.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: Kidneys are retrieved by a transplant surgeon experienced in the procedure.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

2: Cold storage time is below 24 hours, where possible.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

3: Reasons for cold storage exceeding 24 hours are documented.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

4: Documentation of damage to retrieved kidneys is sent with the donor kidney to the transplant unit.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

5: A minimum of 70% of donor kidneys from people on artificial ventilation, who are confirmed to be dead by brain stem testing, function immediately.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

6: The percentage of kidneys that never function is no more than 5% for people on artificial ventilation, who are confirmed to be dead by brain stem testing.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

Standard 10 - Transplantation 3: Survival Rates

Patient and transplant survival rates following kidney transplantation are within acceptable limits.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: Following live related donor kidney transplantation: Patient survival rate is a minimum of 95% at 1 year; Transplant survival rate is a minimum of 93% at 1 year.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

2: Following first cadaver kidney graft transplantation: Patient survival rate is a minimum of 95% at 1 year and a minimum of 80% at 5 years; Transplant survival rate is a minimum of 85% at 1 year and a minimum of 66% at 5 years.

STATUS: Crosshouse Hospital is not a transplant unit.
Not applicable

3: Transplant patients are reviewed regularly by a nephrologist or transplant surgeon.

STATUS: Transplant patients are reviewed regularly in the first year post-transplant by a nephrologist at Western Infirmary Renal Unit, and thereafter by a nephrologist at Crosshouse.
Met

Standard 11 - Patient Focus 1: Out-patients

Waiting times for new patient appointments are within acceptable limits and clinic letters are sent out with minimum delay.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: New patients are offered an appointment to be seen within 1 month of referral.

STATUS:
Not met

Audit data provided by the unit indicated that this criterion is not met. A major contributing factor for this target not being met is limited medical staffing. It was noted that a large proportion of the patients being seen at the general nephrology clinic are chronic renal failure patients, as there is currently no provision for a pre-dialysis clinic.

2: Clinic letters are sent to the GP within 2 weeks of being seen by a nephrologist.

STATUS:
Met

Audit data provided by the unit indicated that this criterion is met. The review team commended the secretarial support provided, which ensures clinic letters are issued promptly. However, it was noted that secretarial staff are currently working in excess of contracted hours in order to meet this target.

3: Changes in medication are communicated to the GP via the patient using a written note or by updating a drug booklet.

STATUS:
Met

The review team noted that changes in medication are communicated to the GP. However, staff acknowledged that communications could be more comprehensive.

Standard 12 - Patient Focus 2: Provision of Patient Information

All people with chronic renal failure or on renal replacement therapy, and carers where appropriate, are given information to help them make informed choices.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: All people diagnosed with chronic renal failure, and carers where appropriate, are provided with appropriate information materials which are evidence-based, identify treatment options, possible outcomes, risks, possible side-effects, and sources of further information.

STATUS: All people diagnosed with chronic renal failure, and carers where appropriate, are provided with a range of verbal and written information materials. The review team commended the input of a pre-dialysis nurse specialist who, during a trial period, provided comprehensive support to patients, including via evening meetings. It was noted that this trial period had ended at the time of the visit.
Met

2: Medical and nursing staff discuss possible treatment options which may include home and hospital dialysis, CAPD and APD, cadaver and live donor transplantation, with patients, and carers where appropriate, at a dedicated appointment or home visit.

STATUS: Treatment options are discussed with patients, and carers where appropriate, by medical and nursing staff, using a checklist to ensure all issues have been discussed. The review team commended the pre-dialysis nurse trial, which had ensured that treatment options were discussed with patients in detail at predialysis evening meetings and clinics. It was noted that this trial period had ended at the time of the visit.
Met

3: Patients, and carers where appropriate, are involved in decisions about treatment and changes in treatment.

STATUS: Staff and patient interviews confirmed that patients, and carers where appropriate, are involved in decisions about treatment and changes in treatment. Patients reported that they received comprehensive information on treatment options to allow them to be involved in decisions about their treatment.
Met

Desirable Criteria

4: There is a designated pre-dialysis nurse specialist.

STATUS: A nurse had been seconded for a trial period as a pre-dialysis nurse specialist. However, it was noted that this secondment had ended at the time of the visit. No immediate plans were outlined to make this post substantive.
Not met

Standard 13 - Patient Focus 3: Transportation for Haemodialysis

Delays for patients attending for dialysis are minimised through reasonable measures taken by the Trust.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: 50% of all patients using hospital transportation are collected from home within half an hour of their allotted pick-up time, and all are collected within one hour.

STATUS: Met
Audit data provided by the unit demonstrated that this criterion is met, although it was noted that this did not reflect patient and staff perception. It was reported that collection of patients can be significantly in advance of their appointment times, resulting in long waiting times from collection and arrival at hospital to starting dialysis.

2: 50% of all patients begin dialysis within half an hour of appointment time, and all begin within one hour.

STATUS: Not met
Audit data provided by the unit demonstrated that this criterion is not met, for the reasons stated in criterion 13.1.

3: 50% of all patients using hospital transportation are collected within half an hour of the end of dialysis, and all are collected within one hour, provided they are clinically fit.

STATUS: Not met
Audit data provided by the unit demonstrated that this criterion is missed by a small margin due to a small number of patients not being taken home within 1 hour of the end of dialysis. The review team noted that there are issues with regard to the service provided on a Saturday, as transport is via emergency ambulances only.

4: Reasons for delays of more than an hour are documented.

STATUS: Not met
Reasons for delays of more than 1 hour are not documented.

5: Patients who wait for hospital transport do so in comfortable surroundings.

STATUS: Not met
The review team concluded that the waiting area for patients awaiting hospital transport, although comfortable, does not have sufficient capacity for all patients to wait at peak times. Not all patients are therefore able to wait there at all times.

Desirable Criteria

6: Within the constraints of population density and geography, a unit is available within half an hour's travelling time for patients.

STATUS: Not met
The review team concluded that this criterion is not currently met. Although a feasibility study has been undertaken, there are no plans in place to establish a satellite unit in another part of the region. It was reported that the feasibility study concluded that the establishment of a satellite unit was not a viable option due to medical staffing and patient conditions. Staff also highlighted that the ability of medical staff to influence decisions regarding the provision of renal services is limited due to the amount of time spent covering general medical duties.

Standard 14 - Audit: Information/Data Collection

There is continuous data collection to facilitate regular national audit through the Scottish Renal Registry.

Crosshouse Hospital Renal Unit, Ayrshire

Essential Criteria

1: There are information systems in place for continuous collection of the Scottish Renal Registry core data set to facilitate audit.

STATUS: Information systems are in place for continuous collection of the Scottish Renal Registry core data set to facilitate audit. However, it was noted that current systems for data collection require much re-entry of data and are therefore labour-intensive.
Met

2: The unit takes part in comparative audits of dialysis and transplantation through the Scottish Renal Registry and, where appropriate, UK Transplant.

STATUS: The unit takes part in comparative audits of dialysis and transplantation through the Scottish Renal Registry.
Met

3: There is data collection of the following, where appropriate, to facilitate regular audit: Haemodialysis adequacy (monthly for hospital dialysis and every 3 months for home dialysis); Peritoneal dialysis adequacy (6-monthly); Haemoglobin levels (monthly for hospital dialysis and every 3 months for peritoneal and home dialysis); Peritonitis (occurrence, investigation, treatment and cause); Type and time of access surgery; Immediate function of cadaver kidneys; Patient and transplant survival rates.

STATUS: The review team confirmed that all relevant data are routinely collected to facilitate regular audit.
Met

Desirable Criteria

4: There is collection of incidence, management and outcome data on acute renal failure.

STATUS: Crosshouse Hospital Renal Unit is currently involved in the collection of incidence, management and outcome data on acute renal failure as part of a national study. It was reported that, without additional resources, it will not be possible to continue collection of this data after the end of the national study.
Met

Glossary of Abbreviations — Appendix 1

Abbreviation

APD	Automated Peritoneal Dialysis
CAPD	Continuous Ambulatory Peritoneal Dialysis
EPO	Erythropoietin
GP	General Practitioner
HDU	High Dependency Unit
ITU	Intensive Therapy Unit
MRSA	Methicillin Resistant <i>Staphylococcus aureus</i>
SRR	Scottish Renal Registry
URR	Urea Reduction Ratio

2 Appendix — Review Team Members

Details of Review Visit

The review visit to Crosshouse Hospital Renal Unit, Ayrshire & Arran Acute Hospitals NHS Trust was conducted on 2 October 2002. The review team members for this visit were:

Dr Keith Simpson (Team Leader)

Consultant Nephrologist, North Glasgow University Hospitals NHS Trust

Dr Gordon Baird

General Practitioner, Dumfries & Galloway

Professor Stewart Fleming

Professor of Cellular & Molecular Pathology, Tayside University Hospitals NHS Trust

Ms Fiona Gardiner

Renal Dietician, Dumfries & Galloway Acute & Maternity Hospitals NHS Trust

Mr John Heaney

Lay Representative, Lanarkshire

Dr Ellon McGregor

Consultant Nephrologist, North Glasgow University Hospitals NHS Trust

Ms Maureen O'Neill

Lay Representative, Greater Glasgow

Miss Andrea Ridealgh

Renal Nurse Specialist, NHS Shetland

Clinical Standards Board for Scotland Personnel

Ms Rona Smith

Senior Project Officer, Clinical Standards Board for Scotland

Mrs Sushee Dunn

Project Officer, Clinical Standards Board for Scotland

Observer

Professor Gavin Kenny

Professor of Anaesthesia and Head of Department, Glasgow University

Dr Brian Junor (Chairman)

Consultant Nephrologist, Western Infirmary, North Glasgow University Hospitals NHS Trust

Mr Murat Akyol

Consultant Surgeon, Lothian University Hospitals NHS Trust

Mrs Caroline Arnott

Ward Manager, Fife Acute Hospitals NHS Trust

Dr Gordon Baird

General Practitioner, Dumfries & Galloway

Mrs Megan Casserly

Lay Representative, Greater Glasgow

Mrs Rhona Duncan

Renal Dietician, Ayrshire & Arran Acute Hospitals NHS Trust

Mr James Dunleavy

Renal Pharmacist, Lanarkshire Acute Hospitals NHS Trust

Mr Sandy Glass

Lay Representative, Highland

Dr Chris Isles

Consultant Physician, Dumfries & Galloway Acute & Maternity Hospitals NHS Trust

Professor Alison MacLeod

Honorary Consultant Physician/Nephrologist, Grampian University Hospitals NHS Trust

Ms Lesley Logan

Project Manager, National Services Division

Mrs Maureen Perry

Specialist Nephrology Nurse, Tayside University Hospitals NHS Trust

Dr Keith Simpson

Consultant Physician, North Glasgow University Hospitals NHS Trust

The Board member specifically working with the Adult Renal Services Project Group was **Professor John Cromarty**, Trust Chief Pharmacist, Highland Acute Hospitals NHS Trust.

Dr David Steel (Chief Executive), **Mr Sean Doherty** (Review Team Manager), **Ms Rona Smith** (Senior Project Officer), **Mrs Fiona Russell** (nee Dymitrenko; Project Officer) and **Miss Josephine O'Sullivan** (Project Administrator) from the Clinical Standards Board for Scotland provided support.

Timetable of Visits — Appendix 4

Organisation Reviewed	Dates
NHS Ayrshire & Arran Crosshouse Hospital, Kilmarnock	2 October 2002
NHS Dumfries & Galloway Dumfries & Galloway Royal Infirmary, Dumfries	23 July 2002
NHS Fife Queen Margaret Hospital, Dunfermline	21 August 2002
NHS Glasgow (North) Glasgow Royal Infirmary Including: Falkirk & District Royal Infirmary (satellite unit) Stobhill Hospital, Glasgow (satellite unit)	26 June 2002
Western Infirmary Including: Gartnavel General Hospital, Glasgow (annex) Inverclyde Royal Hospital, Greenock (satellite unit)	12 June 2002
NHS Grampian Aberdeen Royal Infirmary Including: Dr Gray's Hospital, Elgin (satellite unit) Peterhead Community Hospital (satellite unit) Chalmers Hospital, Banff (satellite unit)	23 October 2002
NHS Highland Raigmore Hospital, Inverness	29 May 2002
NHS Lanarkshire Monklands Hospital, Airdrie	10 July 2002
NHS Lothian Royal Infirmary of Edinburgh Including: Borders General Hospital, Melrose (satellite unit) Western General Hospital, Edinburgh (satellite unit)	19 September 2002
NHS Tayside Ninewells Hospital, Dundee	5 September 2002